

PART B – CONTRACT ADMINISTRATION

SECTION B1.00 – CONTRACT AWARD

B1.01 General. A construction project is initiated when the Department issues an Advertisement; a public announcement that informs interested contractors of the project and asks them to submit Proposals to perform the Work. All tabulated Proposals, or bids, submitted to the Department for a construction project are reviewed and evaluated. [102] The Contract Administration Section verifies the accuracy of the bid calculations in each Proposal. The Contract Administration Section also analyzes each Proposal to determine if it meets all the other requirements for Proposals, such as bidding on each item and including all required documentation. [101.87] [101.88] [102.06] [102.07] The Contract is awarded to the qualified contractor submitting the lowest responsive Proposal. [103.02]

The successful contractor is officially awarded the Project via a letter from the Department offering the Contract for execution. The date of this letter is considered the official award date. Copies of this letter are distributed to all involved parties. Within 20 days of the award date, the Contractor will sign the Contract and return it to the Department. The Department will then execute the Contract. Once all parties have executed the Contract, the Contract is considered effective, and a preconstruction meeting can be scheduled.

SECTION B2.00 – PRECONSTRUCTION MEETING

B2.01 General. A preconstruction meeting is conducted for Department construction projects after Contract execution. The preconstruction meeting is considered a prerequisite for issuance of the Notice to Proceed with the work. The preconstruction meeting may be waived by the District Construction Engineer if it is deemed unnecessary due to the nature of the Contract. [108.02]

The preconstruction meeting is intended to serve several purposes. It provides an opportunity for all persons associated with the Project to become acquainted. The preconstruction meeting allows the Department personnel to advise the Contractor of State policies and specifications that may be unfamiliar, briefly review the scope of the Project, discuss potential construction difficulties and specialty items, review the Contractor's proposed method and schedule of operations, and coordinate the Contract activities with utility companies and other interested parties.

The Contractor is required to submit its Schedule of Work to the Engineer for review prior to the preconstruction meeting. No work may be started until the Schedule of Work is acceptable to the Engineer. On projects with complex schedules, the Department will review and approve the first two months of the Schedule and review the rest later. [108.02]

Normally, the Special Provisions require that the Contractor also submit its traffic control plan to the Construction Engineer for approval before the start of the work. It is also desired that the Contractor submit a list of proposed material sources and anticipated subcontractors at the preconstruction meeting. [106.01] [108.01]

The preconstruction meeting will be arranged and conducted by the District Construction Engineer or an authorized representative. It should be scheduled as soon as possible after the Contract has been formally executed. An attendance checklist is provided below to help ensure

that the appropriate people are invited. It is recommended that a meeting place, time, and date be verbally arranged to the satisfaction of the attendees prior to forwarding written confirmation of the meeting details.

The Area Engineer/Construction Manager should designate a competent person to record the preconstruction meeting minutes. The meeting minutes should be prepared, but will not be in the form of a letter to anyone. The names of all persons attending the meeting, as well as important discussions, remarks, directives, and other pertinent information, should be recorded. Following the meeting, the minutes should be reviewed, typed, and distributed to all in attendance and other interested persons whose responsibilities have been discussed at the meeting.

B2.02 Attendance Checklist. Depending on the nature of the Contract, the following participants should be considered for attendance at preconstruction meetings.

- (a) DelDOT
 - (1) District Construction Engineer, Resident Engineer/Project Supervisor, and Area Engineer/Construction Manager
 - (2) Assistant Director of Construction
 - (3) Project Designer
 - (4) Traffic Bureau representative
 - (5) Safety Section representative
 - (6) Utilities Coordinator or a designated representative
 - (7) Real Estate Section representative
 - (8) Materials and Research Engineer
 - (9) Maintenance Engineer
 - (10) Roadside Development Coordinator
 - (11) EEO (Contracts) representative
 - (12) Assistant Director of Design
- (b) Contractor
 - (1) Company officer or delegate
 - (2) Project Superintendent
- (c) FHWA Division Administrator or delegate (Federal-Aid oversight projects only)
- (d) City Government representative
- (e) County Government representative
- (f) Utility companies representatives
- (g) Public transportation companies representatives (including railroad)
- (h) State or local police representative

B2.03 Agenda Checklist. The following topics should be discussed at the preconstruction meeting whenever applicable and should be reviewed item by item from a prepared checklist:

- (a) Right-of-way status
- (b) Utility obstructions and relocations – current status and work schedule
- (c) Permit requirements
- (d) Contractor's Schedule of Work (to be submitted before this meeting)
- (e) Contractor's working hours
- (f) Survey stakeout status
- (g) Contractor's proposed sources of materials

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- (h) Anticipated subcontractors
- (i) Starting and completion dates and any milestone dates
- (j) Method of accumulating chargeable time (Working Day contracts) [101.91]
- (k) Standard Specifications, Plans, and Special Provisions
- (l) Testing procedures – coordination for and reporting results of
- (m) Wage and general payroll requirements, interviews, posters, and similar requirements
- (n) FHWA requirements such as form FHWA-47, EEO requirements, posters, statements, certificates, and physical inclusion of form FHWA-1273 in all subcontracts
- (o) Payment Procedures
 - (1) Change Order procedures
 - (2) Work by Force Account (rental, material, and labor rates)
 - (3) Payment by weight in accordance with Subsection 109.01
 - (4) Supplemental Agreements (agreed prices)
- (p) Signing and maintenance of traffic, including the Contractor's submission of a complete signing plan or schedule
- (q) Public relations, including activities and responsibilities
- (r) Sanitary (toilet) requirements [107.06]
- (s) Field office requirements [759]
- (t) Safety and review of OSHA requirements [107.01] [107.06]
- (u) Required Working Drawings [105.04]
- (v) Unsuitable material encountered, special ditching, and similar issues that could arise during construction [106.09]
- (w) Erosion control procedures [110]
- (x) Notice to proceed [108.02]

SECTION B3.00 – RIGHT-OF-WAY AGREEMENTS

B3.01 General. Right-of-Way Agreements are the written confirmations of the agreements made between individual property owners and an authorized agent from the Real Estate Section. When these agreements are properly executed and approved, they become legal and binding documents. They are required whenever it is necessary to secure additional land or easement for new highway construction or reconstruction. [101.62] [107.11]

Right-of-Way Agreements state the terms and conditions under which the parcel of land was acquired. Monetary payment by the Department for land acquisition may occasionally be substituted by physical alterations to the owner's property. Whenever possible, these property changes are incorporated into the Plans and Specifications to become a part of the Contract.

When the Right-of-Way Agreements specify work to be performed in conjunction with the Project, and this work is not shown on the Plans or covered in the Specifications, the Contractor must perform the additional work as requested by the Engineer. Payment for this Additional Work is made at the same Unit Prices contained in the original Proposal. If the original Proposal does not contain comparable items of work, the additional work will be paid for as Extra Work. [109.04]

A summary of the Right-of-Way Agreements for each project is prepared in abbreviated form for distribution to all interested parties. It is the Team's Construction Section's

responsibility to forward a copy of this summary to the Resident Engineer/Project Supervisor for his or her use.

It is recommended that a District representative, usually the Resident Engineer/Project Supervisor, the Department's Real Estate Agent, and the Contractor conduct a thorough field review of all Right-of-Way Agreements prior to the start of actual construction.

In conclusion, Right-of-Way Agreements made for the Department that become a part of the Contract, either initially or at some later date, are binding on both the Contractor and the Department. All persons associated with the construction of a project have the responsibility to ensure that all the conditions of Right-of-Way Agreement are fulfilled.

When a Right-of-Way Agreement has not been obtained, the Resident Engineer/Project Supervisor is required to obtain from the property owner a Temporary Agreement to Trespass prior to allowing the Contractor to work. A sample form is shown in Part H.

SECTION B4.00 – PUBLIC RELATIONS

B4.01 General. All Department employees should bear in mind that their actions and conduct reflect directly on the Department. In other words, the public judges the Department by its contact with Department employees. Therefore, it is imperative that all Department and consultant personnel conduct themselves in a courteous and business-like manner, and that they execute their jobs as efficiently and conscientiously as possible. The Department can only benefit if a pleasing and favorable impression is made.

The Department's field personnel are in constant contact with the public. They should listen to all inquiries attentively, always maintain a friendly attitude, and avoid being too talkative. They should never, under any circumstances, make unauthorized promises or be drawn into controversial discussions. Avoid expressing personal opinions.

Any person questioning the Department's policy or sensitive issues should be referred to the Public Relations Office.

SECTION B5.00 – SCHEDULE OF WORK

B5.01 General. A construction project of any size requires some level of management. As the complexity of the project grows, the project management becomes more sophisticated. The project manager is primarily interested in three things: cost, time, and quality. Having a firm grasp on these three things will help ensure that a project is built on budget, on time, and in accordance with the Plans and Specifications. The Schedule of Work is a means of project management that helps the Contractor efficiently manage the cost and time on a project. **[101.69]**
[108.04]

The Schedule of Work places the construction activities in the order in which they will be performed. Time, usually expressed in days, is associated with each activity to indicate how long the Contractor expects the activity to take. This allows the Contractor to determine if an activity is taking longer than planned. It also allows the Contractor to determine, at any given point, which construction activities are upcoming and plan for those activities. Finally, the Contractor can use the Schedule of Work to determine how any changes or delays will impact the upcoming activities and the overall completion date for the Project.

The Schedule of Work is also used by the Resident Engineer/Project Supervisor and Inspectors on a project. Using the schedule, the Inspectors can determine what upcoming work

will need to be inspected so that they can arrange for any special equipment or personnel necessary. The Schedule of Work can also be used to monitor the Contractor's progress and assure the Department that the Contractor has considered temperature requirements, delivery and storage requirements, and similar items when planning its work.

B5.02 Schedule Requirements. The Contractor must submit a Schedule of Work to the Construction Engineer for approval prior to the issuance of the official Notice to Proceed. The Schedule must be submitted to the District Engineer before the preconstruction meeting. The Schedule should meet the following requirements: **[108.02] [108.04]**

- (a) It should comply with the completion and milestone dates indicated in the Contract. The work should be scheduled to occupy all the time allotted for the Contract; that is, there should be zero float on the baseline schedule critical path.
- (b) It must list all principal items, or preferably, groups of related items of work.
- (c) It should not conflict with the Plans or Specifications.
- (d) It should consider all Right-of-Way and Utility Agreements as well as other similar Department commitments.
- (e) It should show activity durations that are reasonable and representative of the scope of the activity. The activity durations should be determined by using productivity rates based on workdays. If any durations are considered excessive or insufficient, the industry standard can be used. If the industry standard can not be agreed on, then industry estimating books such as R.S. Means® will govern the allowed activity duration.

The Contractor's Schedule of Work as submitted and approved should reflect a relatively accurate time requirement for the execution of individual items of work. It should be pointed out, however, that the scheduled completion date must always be in accordance with the Contract, and in case of a discrepancy, the Contractor must change the Schedule of Work to reflect the Contract completion date. **[108.04]**

Two types of schedules are acceptable to the Department, the bar chart schedule and the critical path method (CPM) schedule. The CPM schedule is the preferred method of Project control, and may be mandatory on some projects; however, both types of schedules are used on Department projects, so the Inspector should be able to understand both. Figure B-1 shows a typical CPM schedule in bar chart format. Figure B-2 shows an Activity ID Report, similar to what the Inspector may see when working on a project that is using CPM schedules. For more information on CPM schedules, the Inspector is referred to the following subsection, the Special Provisions, and to a scheduling manual such as *Construction Planning & Scheduling*, published by the Associated General Contractors of America (AGC).

On all projects, the Contractor is required to submit a two-week activity schedule every Friday. A sample of a two-week schedule is shown in Part H. **[108.04]**

B5.03 CPM Schedule Requirements. CPM schedules allow different calendars to be set up and applied to different activities. These calendars indicate when work can and cannot be performed. For example, the standard calendar shows that no work can be performed on Saturdays or Sundays. Calendars should be used in the CPM Schedule to reflect the time periods when activities can be scheduled. The calendars for the schedule must include weather related and environmental shutdown periods. As a minimum, the following calendars should be used:

- (a) A 24-hour, 7-day calendar should be used for concrete curing, shop drawing approval, and other activities without any time constraints
- (b) A typical work calendar showing the Contractor's standard work schedule
- (c) A concrete paving calendar
- (d) An asphalt base calendar
- (e) An asphalt surface calendar
- (f) An environmental calendar

The activity sequence should be typical of proficient scheduling practice. The sequence must be logical and representative of the Contractor's order of the work. CPM schedules use activity successors and predecessors to determine the project logic or activity sequence. A successor is an activity that must follow another activity. A predecessor is an activity that must be done before another activity. A given activity cannot start until all predecessors have been completed. The Department may request a re-sequencing of activities to effect competent scheduling practice and realistic Project logic.

CPM schedules also allow each activity to be coded with additional information, such as phase, area, and responsibility. Each activity in the Contractor's CPM Schedule should be coded with a minimum of the following information:

- (a) Construction phase
- (b) Activity description
- (c) Estimated duration of activity (the best estimate available at time of computation)
- (d) Earliest start date (by calendar date)
- (e) Earliest finish date (by calendar date)
- (f) Latest start date (by calendar date)
- (g) Latest finish date (by calendar date)
- (h) Scheduled or actual start date (by calendar date)
- (i) Scheduled or actual finish date (by calendar date)
- (j) Float
- (k) Resources required for the completion of the activity. Resource information includes labor, equipment, materials, and services, and has a range and amount of availability.
- (l) Responsibility for activity (prime contractor, subcontractors, suppliers, utilities, etc.)
- (m) Bid item of which activity is a part

The CPM schedule should include activities to represent the submittal, approval, manufacturing, and delivery time required for each Working Drawing to be produced for the Project. Each item in the list of Working Drawings should be included in the schedule. For each Working Drawing, there should be three separate activities. One activity should reflect the Contractor's submittal of the Working Drawing. The second activity should reflect the Department's review and approval of the Working Drawing. The third activity should reflect the manufacturing and delivery time required for the item. Both the Working Drawing submittal and delivery activities should be correlated with the list of Working Drawings.

Materials that do not require Working Drawings but have long lead or fabrication times or are difficult to fabricate or acquire should be included as activities. Each applicable item in the list of materials should be included as an activity. The material fabrication and delivery activities should be correlated with the list of materials.

Utility work should be included as activities. Each item listed in the utility statement should be an activity. These activities should be correlated with the utility statement.

Surcharge durations and special testing, if applicable, should also be included as activities. Sufficient duration times for these activities will be allowed as agreed to by the Engineer.

Float on a CPM schedule is defined as the amount of time between when an activity can start and when an activity must start. Total float is defined as the amount of time an activity can be delayed without affecting the overall time of project completion. It is understood by the Contractor and the Department that float is a shared commodity, not for the exclusive use or benefit of either party. Either party has the full use of the float until it is depleted.

The critical path on a CPM schedule is defined as the series of activities that has the longest path in time. The submitted activity sequence and durations must generate a CPM schedule having only one critical path; a schedule with multiple critical paths will not be allowed. Activities like project-wide Maintenance of Traffic or Temporary Erosion Control that extend for the duration of the project or for long durations should be divided and condensed into “establish” and “conclude” activities to prevent them from being on the critical path. As a rule, no greater than thirty percent of all activities are allowed to be on the critical path.

The project start date, or initial data date, of the original CPM schedule should be the first chargeable day of work. The submitted activity sequence and durations must generate an original CPM schedule using all the Contract Time and a critical path having zero total float. An early completion schedule will not be allowed. The Contractor’s original schedule should reflect the use of the entire Contract Time. The schedule ending date that uses all the Contract Time in the original CPM schedule will be the original Project Completion Date.

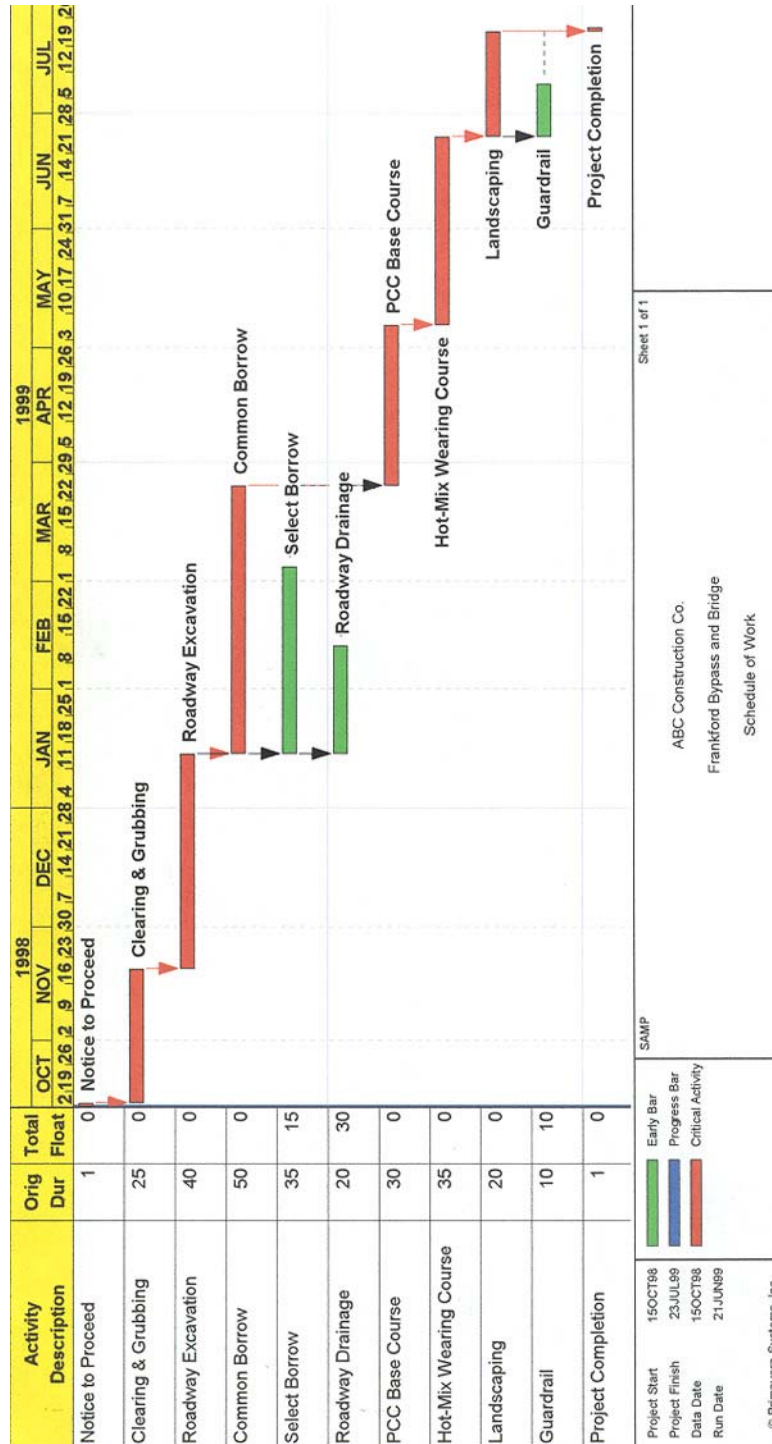


Figure B-1: CPM Schedule in Bar Chart Format

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PRIMAVERA PROJECT PLANNER								
ABC Construction Co. Frankford Bypass and Bridge			Classic Schedule - Sort by ES, TF					
START DATE 15OCT98			REPORT DATE 15OCT98					
FIN DATE 23JUL99			RUN NO. 4					
DATA DATE 15OCT98			PAGE NO. 1					
ACTIVITY ID	ORIG DUR	REM DUR	ACTIVITY DESCRIPTION	EARLY START	EARLY FINISH	LATE START	LATE FINISH	TOTAL FLOAT
5	1	1	Notice to Proceed	15OCT98	15OCT98	15OCT98	15OCT98	0
10	25	25	Clearing & Grubbing	16OCT98	19NOV98	16OCT98	19NOV98	0
20	40	40	Roadway Excavation	20NOV98	14JAN99	20NOV98	14JAN99	0
30	50	50	Common Borrow	15JAN99	25MAR99	15JAN99	25MAR99	0
40	35	35	Select Borrow	15JAN99	4MAR99	5FEB99	25MAR99	15
70	20	20	Roadway Drainage	15JAN99	11FEB99	26FEB99	25MAR99	30
50	30	30	PCC Base Course	26MAR99	6MAY99	26MAR99	6MAY99	0
60	35	35	Hot-Mix Wearing Course	7MAY99	24JUN99	7MAY99	24JUN99	0
90	20	20	Landscaping	25JUN99	22JUL99	25JUN99	22JUL99	0
80	10	10	Guardrail	25JUN99	8JUL99	9JUL99	22JUL99	10
100	1	1	Project Completion	23JUL99	23JUL99	23JUL99	23JUL99	0

Figure B-2: Typical Activity ID List for a CPM Schedule**SECTION B6.00 – CONTROL OF MATERIAL**

B6.01 General. Materials are defined in the Specifications as “any substances other than equipment used in the construction of the Project.” This includes both temporary materials used for construction, such as formwork, and materials that become a permanent part of the Project, such as reinforcing steel. [101.47]

B6.02 Material Approval. Material approval is given by the Materials and Research Section and can be categorized into four general types:

- (a) Approval of the source of materials.
- (b) Satisfactorily passing preliminary tests or approval of certified analysis.
- (c) Satisfactorily passing job control tests.
- (d) Satisfactorily passing random sampling tests.

It is intended that the approval of all materials used on the Project be at least one of these types.

It is preferred, but not always possible, to have the sources of materials approved before Notice to Proceed is given. In any event, the sources of materials should be submitted to the Materials and Research Section for approval well in advance of the time of use. The Inspector in charge should ensure that this has been done. The Materials and Research Section, by letter to the Contractor, will approve or reject each source of material. The Inspector should include copies of the material approval or disapproval letters for all materials in the Project records. No materials should be used until written approval has been obtained. [106.02]

After the material source has been approved and prior to delivery to the Project, materials will undergo preliminary testing. These test results, in the form of Materials and Research reports or certified analysis reports, should also become a part of the Project records. These test results should be satisfactory before the materials are used on the Project. When, and only when, materials pass the Department’s preliminary tests will they be approved for use.

The final approval of all materials is dependent upon satisfactory performance in the field. In other words, approval by initial testing analysis is only valid when the material functions in the field as specified.

B6.03 Inspector's Responsibility. It is the direct responsibility of every Inspector to ensure that only approved materials are used on the Project. Upon delivery of any materials, the Inspector should immediately determine if the material has been approved by the Materials and Research Section. Precast and prefabricated items must be inspected immediately upon delivery to the Project site to ensure that no damage has occurred either during shipment or after the plant inspection by the Materials and Research Section. When the testing has been performed by an outside laboratory, the Inspector should verify acceptability of the material by reviewing the appropriate certificate of compliance. **[106.03]** Inspection tickets, tags, or stamps should be reviewed and collected. The Materials and Research Section should be notified when materials are delivered without evidence of inspection so that the materials can be tested on the Project site or random samples can be sent to the Materials and Research Section.

It must be fully recognized by the Inspector and the Contractor that when defective materials are discovered they must be discarded and removed from the Project regardless of the results of prior testing. **[106.02][106.08]** It is pointed out that under certain conditions material will be approved for use even if one test in many indicates unacceptable materials. In this situation, the material might be approved on a statistical analysis basis. These cases should be decided only by the Engineer or an authorized representative. Materials that may vary in consistency, quality, gradation, or other characteristics must be periodically tested for conformance with the Specifications. It must also be understood that although the Inspector may not do the testing, the Inspector is responsible to see that the testing has been done and that materials used are in conformance with the Specifications. **[105.02] [105.03]**

A record of all material sources and material approvals should be maintained by the Inspector in the Project files.

B6.04 Material Rejected in the Field. Laboratory testing and inspection is usually based on random samples. Consequently, defective material may be delivered to the Project site from a stockpile that was initially approved. Also, material may be damaged on the Project prior to its use or even after being used. The Inspector is responsible for rejecting all defective materials that might prove detrimental to the Project.

It is recommended that all materials that are rejected in the field be clearly and permanently marked so that they may be readily identified at any future date. The method of identification used should not, however, detract further from the salvage value of the material. All rejected material must be removed from the Project site. **[106.08]**

B6.05 Field Testing Record Keeping. After arriving on the Project, assuming they have been preliminarily approved, all materials must perform satisfactorily. Proof of satisfactory performance comes from field-testing. Field-testing may be classified into the following categories:

- (a) General observation of a material's performance or appearance as witnessed by the Inspector or any other qualified employee of the Division of Transportation Solutions
- (b) Job control tests

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(c) Random sampling tests

The Inspector in charge should maintain a system of cross checks for all field tests. This check should easily display where all tests have been taken and the relationship of each test to others.

A suggested method for maintaining this record is to use an extra set of Plans. Use this set for no other purpose but test records.

Select a readily identifiable pencil color for each test type, with a reference key placed on the Plans. An alternative to various colors would be selected symbols. Each field test report should be studied for station count and position, and then recorded on the Plans as the report is received. Certain work, such as the construction of embankments, will require a vertical as well as a horizontal location. In this case, select the profile view for plotting the test symbols rather than the plan view. Mark the test report “plotted” before filing. Identify each symbol nearby with numbers showing test record number and result, such as JC #144 – 99.6% or RT #4 – 1 3/16" (RT #4 – 30 mm). In this example, “JC #144 – 99.6%” indicates that Job Control test number 144 was performed at the location indicated on the Plans, and the result of the test was 99.6%. Similarly, “RT #4 – 1 3/16" (RT #4 – 30 mm)” indicates that Random Test number 4 was performed at the location indicated, and the thickness measured was 1 3/16" (30 mm).

A graphical record such as this will indicate where all tests have been taken, whether failing tests in an area are superseded by passing ones, and if Job Control tests and Random Tests are compatible.

SECTION B7.00 – SUBLET WORK AND SUBCONTRACTOR APPROVAL

B7.01 General. A contractor may desire to secure an additional contracting firm to perform a portion of the Project. This firm is referred to as a subcontractor, and the work that the subcontractor performs is known as sublet work.

B7.02 Approval Procedure. When the Contractor desires to sublet a portion of its contract, the Contractor must forward a written request to the Construction Engineer requesting both approval to sublet and approval of the subcontractor. When the Contractor requests approval to sublet a portion of the project, the Construction Engineer must then review the nature of the work to be sublet as well as the qualifications of the subcontractor. If the subcontractor has not worked with the Department for the type of work in question, satisfactory evidence of the subcontractor’s competency must accompany the request. When the work to be sublet is not a complete bid section, the request must also indicate the estimated monetary value of the work involved. **[108.01]**

Following a favorable review of the request, the District will ascertain that the monetary value of the total work to be sublet does not exceed the maximum allowable as outlined in the Specifications. In order to determine the value of the subcontracted work, the Contractor must submit a copy of the complete and signed subcontract agreement. If the subcontract agreement shows the actual dollar amount of the subcontracted work, then that value will be used to compute the percentage of work being sublet. If the dollar amount shown on the subcontract does not include the cost of material used by the subcontractor, it shall be added in as specified in the Specifications. If the Contractor elects to delete the dollar amount of the subcontract, then the unit bid prices of the subcontracted items will be used to compute the percentage of work being

sublet. The Contractor may not elect to initially delete the subcontract dollar value and then reestablish the value at a later date.

The Area Engineer/Construction Manager will prepare a letter of approval for the Construction Engineer's signature. This submission is also reviewed by the Chief Estimator prior to the Construction Engineer's review and approval. Copies of the approval letter are sent to all interested persons. No work can be performed by a subcontractor until approval is granted by the Construction Engineer. **[108.01]**

B7.03 Contractor Responsibility and Execution. Approval of a subcontractor does not relieve the Contractor of its responsibility for proper performance of the Contract in full. Furthermore, correspondence from the State that pertains to the subcontractor will always be directed to the Contractor, and vice versa. **[108.01]**

B7.04 Inspector's Responsibility. It is the duty of all State personnel assigned to the Project to ensure that all work is performed only by approved forces. This is especially true of sublet work. If the subcontractor is not officially approved in writing, the subcontractor must be ordered from the Project until approval is received from the Construction Engineer.

The requirement that only approved subcontractors are to work on a project cannot be overemphasized. Sometimes the approval process is delayed because the Contractor neglects to submit the affirmative action statements, copies of subcontracts, EEO documents, or other information required by the Specifications. However, there is no excuse for permitting an unapproved subcontractor to work. Also, just because a particular firm has been approved as a subcontractor in the past on other projects does not mean that it is automatically approved on the current project.

The consequence of allowing unapproved subcontractors to work on Federal-Aid projects may be the withdrawal of Federal funds from the Project. If, despite warnings from the Resident Engineer/Project Supervisor, the Contractor continues to permit an unapproved subcontractor to do work on the pretense that the subcontractor's personnel are on the Contractor's payroll, the Resident Engineer/Project Supervisor is instructed not to pay for the items of work performed by these workers until it has been verified that these workers are, in fact, on the Contractor's payroll. This requirement applies to both Federal-Aid and State-funded projects.

The decision whether or not to permit a subcontractor to perform work on a project has to be made at the field level. If there is a letter in the project files approving a particular firm as a subcontractor for the project, then there is no problem allowing the subcontractor to work. If there is no such approval letter, then call the Group Estimator.

B7.05 Changing an Approved Subcontractor. If, after receiving formal written approval of a subcontractor, the Contractor wishes to make a substitution, the procedure described below must be followed.

The Contractor must submit to the Construction Engineer its written request for the substitution, stating the specific reason for the change. The District Engineer will make a recommendation in the usual manner, but must evaluate the request in the light of whether the change is in the best interest of the State. No substitution for an approved DBE subcontractor will be allowed without approval from the Contract Administration Section.

It is stressed that such substitutions should be held to a minimum and are generally to be discouraged.

SECTION B8.00 – NOTICE TO PROCEED

B8.01 General. After a contract is executed, there are procedures to be followed and obligations that must be fulfilled before actual construction may begin. Once these requirements have been met, the Contractor can be given Notice to Proceed, which is the official notification that the Contractor may begin work. Although these requirements may vary slightly for different types of projects, the general procedures required for the issuance of a Notice to Proceed with construction are as follows:

- (a) The following items must be received, reviewed, and acted upon by the District before recommendations concerning issuance of Notice to Proceed:
 - (1) Contract must be executed.
 - (2) Preconstruction meeting held and meeting minutes on file.
 - (3) Right-of-way provisions on file (if applicable).
 - (4) Utility problems on record (if applicable).
 - (5) Contractor's Schedule of Work on file and approved.
 - (6) Submission of material sources and approval of the sources.
 - (7) Submission of proposed subcontractors or a statement that none are presently anticipated. Also, DBE goals have been met.
 - (8) Completion of any special preliminary requirements for a particular contract.
- (b) When the Contract has been fully executed and there are no further questions pertaining to the Contract, the Area Engineer/Construction Manager will prepare a letter to the Contractor for the Construction Engineer's signature. This letter will advise the Contractor to proceed with the Work under the terms of the Contract.

B8.02 Official Notice to Proceed. The letter, referred to above, is the official Notice to Proceed. This letter will specify the date on or before which the Contractor is expected to begin work. Time charges will be based on the date work begins or the date specified in the letter, whichever comes first. **[108.02]**

SECTION B9.00 – PLANS AND SPECIFICATIONS

B9.01 General. The Plans and Specifications are the most important working documents on a Project. These documents illustrate and describe in detail all phases of the intended construction. It is essential that all persons assigned to the Project have a thorough knowledge and understanding of all applicable Plans and Specifications.

The Plans are normally presented in either U.S customary (English) or metric units developed independently within each system. The Standard Specifications, Supplemental Specifications and Special Provisions for a particular Contract may be presented in either system of units. The relationship between U.S. customary and metric values is neither an exact (soft) conversion nor a completely rationalized (hard) conversion. The metric values are those that would have been used had the Contract been presented exclusively in metric units; the U.S. customary values are those that would have been used if the Contract had been presented exclusively in U.S. customary units. Work is to be performed entirely in the system set forth by the Plans, with no attempt made to convert directly between the two.

B9.02 Specifications. Specifications define the qualitative requirements for products, materials, and workmanship upon which the Contract is based.

The term Specifications is used throughout this Manual and the Contract. When used, the term Specifications includes the Standard Specifications, Special Provisions, and any Supplemental Specifications included in the Contract.

B9.03 Bid Proposal. The Bid Proposal is a bound book issued to all prospective bidders. The Bid Proposal contains the General Description, General Notices, Supplemental Specifications, Special Provisions, and the Bid Proposal Form. The Bid Proposal is a part of the Contract, and all requirements in the Bid Proposal must be met by the Contractor.

B9.04 Standard Specifications. The *Standard Specifications for Road and Bridge Construction*, issued by the Department, is usually referred to as the Standard Specifications or Standard Specs.

The intent of the Standard Specifications is to provide a set of specifications that are usually applicable for construction. These Specifications should be adhered to throughout the Project unless supplemented or superseded by another Contract document. If there is a discrepancy between two or more Contract documents, the governing ranking is:

1. General Notices
2. Special Provisions
3. Plans
4. Supplemental Specifications
5. Standard Construction Details
6. Standard Specifications [105.06]

The Standard Specifications are an integral part of every Contract, and the specifications contained therein are equally binding on the Contractor and the State. Deviations from these specifications will not be permitted.

It is essential for all Department and consultant personnel engaged in construction activities to acquire a working knowledge of the Standard Specifications, and for them to conduct their activities and actions in accordance with the Standard Specifications. Each inspector should be particularly familiar with the section that pertains to that inspector's assignment, and it should be studied and restudied as often as required.

B9.05 Special Provisions. At least one copy of the Special Provisions must be readily accessible to or possessed by the Resident Engineer/Project Supervisor.

The Special Provisions, as generally known in the field, are a part of the Bid Proposal. The Special Provisions of the Contract may contain additional provisions or supersede some of the requirements in the Standard Specifications. The Special Provisions are defined as follows:

Special Provisions are specific clauses setting forth conditions or requirements peculiar to the project under consideration and covering work or materials involved in the estimate of quantities and the proposal but which are not sufficiently covered by the Standard Specifications. Should any Special Provisions conflict with the Standard Specifications, the Special Provisions shall prevail. [101.74] [105.06]

Personnel with responsible assignments on construction projects should be thoroughly familiar with the Special Provisions. The degree of familiarity expected of each person, of course, varies with his or her assignment. In essence, the District staff and the Resident Engineer/Project Supervisor should be completely familiar with the Special Provisions, and each inspector should be thoroughly familiar with the sections pertaining to his or her respective assignment.

It is recommended that the Resident Engineer/Project Supervisor immediately review the Special Provisions when assigned to a new construction project. All unusual and important items should be underscored and discussed with the staff and the Contractor. The latter may initially be done during the Preconstruction Meeting. As the construction progresses, the applicable items in the Special Provisions should be periodically reviewed to maintain a working familiarity with their requirements.

Special Provisions are written for each project. Even though the item number and title of a Special Provision may be identical to that on a previous project, the content may vary from project to project. Therefore, the Inspector should always review the Special Provisions for the Project in detail.

B9.06 Supplemental Specifications. Supplemental Specifications are approved additions and revisions to the Standard Specifications. [101.74] Supplemental Specifications are different from Special Provisions in that Supplemental Specifications are included in the Contract for all projects, while Special Provisions are included only for specific projects.

B9.07 Other Specifications. Most construction contracts refer to other specifications, such as those set forth by the American Society for Testing Materials (ASTM), the American Association of State Highway and Transportation Officials (AASHTO), and others. Whenever these “other specifications”, or parts thereof, are referred to in the Contract, they become a binding part of the Contract.

The Project staff and the Resident Engineer/Project Supervisor should ascertain at the outset of the Contract exactly which other specifications are applicable, and therefore enforceable. A copy of all “other specifications” should be on file in the Project field office.

B9.08 Plans. The Plans are the approved detailed drawings that illustrate the scope of the Project. They show the Project location, construction features, estimated quantities, and other information relative to the actual construction phase.

The Plans may be prepared by either the Department’s Design Section or a consulting engineering firm. Plan sheets are normally 22 by 36" (560 by 915 mm) in size. The Plans usually consist of several sheets. All Plans must be approved by the Design Engineer and the Chief Engineer.

Before the Contract is awarded, copies of the Plans are distributed to the interested bidders by the Contract Administration Office. Following the Award, additional copies of the Plans should be obtained from the Construction Engineer.

All Inspectors on the Project are expected to be familiar with the Plans. They should study and review each detail shown and understand how it fits into the overall Project. Whenever errors or discrepancies are discovered, or if improvements can be suggested to clarify the Plans, they should be discussed with the Resident Engineer/Project Supervisor. If necessary, the

Resident Engineer/Project Supervisor will pass the comments on to the District Construction Engineer.

B9.09 Addenda to the Contract. Occasionally, modifications will be made to the Contract after Advertisement of the Project but before Proposals are submitted. These modifications are issued as addenda and become part of the Contract. Contractors are responsible for all work contained in all Contract addenda; therefore, the Inspector should ensure that copies of all addenda are available on the Project.

B9.10 Plan Revisions during the Project. Through the course of a construction project, it occasionally becomes necessary to revise the Plans. The revision may be prompted by discrepancies, redesign, or necessary field changes. If the need for a change originates in the field, the Construction Engineer will request a clarification from the designer and have the designer initiate the revision. The request may be either oral or written, depending upon the complexity of the change. Following the approval of the revision, the designer will make the change to the construction plans and files.

Revised sets of the construction plan sheets when a tracing has been revised, 18 prints are forwarded to the Construction Engineer with a tabulation of the changed quantities (if applicable). All revisions are issued by the District Construction Engineer to interested parties using a transmittal letter addressed to the Contractor.

The Construction Engineer is responsible for issuing all new Contract drawings or design drawing revisions, regardless of their originating source, once the Contract has been officially awarded to the Contractor.

Official Plan revisions should be carefully reviewed by the field staff, particularly the Resident Engineer/Project Supervisor, then filed systematically so that the changes will be built into the Contract and not overlooked. It is suggested that the superseded sheet (original print) be marked “void” in large, conspicuous, red letters, and the new sheet be placed in front of the old sheet in the bound assembly. It is also suggested that the revised items be clearly marked on the new sheet so that the revisions will be readily apparent. In essence, a complete set of Plans should include a copy of all the original sheets as well as any new or revised sheets.

The Team Estimator should immediately initiate a Change Order whenever receiving Plans that involve quantity adjustments. The Change Order should refer to the revised Plans and the tabulation of revised quantities for authorization of the Change Order.

B9.11 As-Built Plans. A set of as-built plans must be maintained for each construction contract by the respective Resident Engineer/Project Supervisor. The as-built plans should be filed in the field office and used for the sole purpose for which they are intended. Periodic progress markings should not be recorded on the as-built plans. It is suggested that the title sheet be clearly marked with red pencil for ease of identification.

The as-built plans are an assembly containing a print of each original plan sheet or revised sheet. Original sheets that have been superseded need not be included. These as-built plans are maintained for recording (with a red pencil) approved field changes that are not shown on a revised sheet. Such field changes are usually of a minor nature, as significant changes must be formally documented by a revised sheet or sheets.

The as-built plans should be carefully and accurately prepared. They should be clean and neat. All applicable field changes should be immediately recorded thereon, and not at a later date

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“as remembered” by the Inspector. It is stressed that the as-built plans are the most current set of plans, and thus they should always be up-to-date. The neat appearance of these plans should reflect the conscientious manner in which the Project was administered in the field.

When the Project is complete and accepted by the Department, the as-built plans should be submitted to the Construction Engineer. The District staff, in turn, reviews them for completeness and acceptability and forwards them to the Project Development Design Section. The construction plan sheets are then revised to reflect the changes noted on the as-built plans. Prints may be obtained from the Quality Section.

B9.12 Progress Plans. It is desirable for the Resident Engineer/Project Supervisor to maintain another separate set of Plans on which to record the daily (or otherwise) construction progress. Such a set of plans would substantiate the progress information that must be recorded in the official Construction Diary. It also would reflect clearly and readily the status of the Project.

B9.13 Working Drawings. Supplementary drawings that are prepared by the Contractor are usually referred to as Working Drawings. They also may be known as shop drawings, vendor’s drawings, bar lists, mill lists, or by any of a number of other names. Working Drawings are usually required for structures, particularly the more complex structures. The Special Provisions should be reviewed to determine if Working Drawings are required for other items. [101.92] [105.04]

All required Working Drawings must be formally approved by the Bridge Engineer when they refer to structures. At the discretion of the Construction Engineer, the Contractor may forward the Working Drawings directly to the Bridge Engineer for approval. If this is the case, a copy of the Contractor’s transmittal letter and the Bridge Engineer’s approval letter should be forwarded to the Construction Engineer. The submittal process for Working Drawings is illustrated in the Specifications. [105.04]

Approved Working Drawings become as much a part of the Contract as the Plans and must be strictly followed.

It is the responsibility of the Resident Engineer/Project Supervisor to ensure that Working Drawings are submitted, approved, and followed, wherever specified, prior to the actual execution of the work. A copy of all approved Working Drawings should be on file in the field office.

B9.14 Cross Sections. The drawings that represent the vertical planes or sections taken transversely at intervals through the Project site are commonly referred to as cross-sections. They are usually drawn by extending a line through several known position points. These points are located horizontally with respect to an established reference line (usually the centerline, base line, etc.), and their vertical height or elevation with respect to a given bench mark or a known elevation. In essence, both dimensions are known and fixed for each position point. When each of the position points have been inter-connected, the cross section serves as a pictorial representation of the area as it exists or is proposed.

The cross sections most frequently used in construction work are divided into four basic categories:

- (a) Typical sections shown on the Plans that illustrate the proposed sections of the road or structure.

- (b) Cross sections that represent the contour of the existing earth, roadway, or structure prior to the start of work. These cross sections, called preliminary cross-sections, are not normally attached to the original Plans; nevertheless, they are an integral part of the Contract.
- (c) Cross sections that represent intermediate work such as the actual depth of excavation or similar information.
- (d) Final cross sections that illustrate the contour of the completed items of work or, perhaps, the entire Project.

Cross sections are an invaluable aid in the construction of a project. They are particularly useful for computing excavation or fill quantities and for identifying potential drainage problems, among other uses.

The Project Engineer/Supervisor must ensure that all preliminary and intermediate crosssections have been taken and recorded before these areas are disturbed. This work must be done by state forces or consultant working directly for DelDOT. This will never be part of the Construction Engineering Item.

The importance of sufficient cross-sections cannot be overstressed, and they should always be taken, as required, in a most conscientious manner. This is particularly the case when they are used as a basis for computing pay quantities. Insufficient or improperly taken cross-sections can be detrimental to the Project and costly to the State and the Contractor.

SECTION B10.00 – CONTRACT CHANGES

B10.01 General. Contract changes refer to any authorized revisions that affect the Contract after the Project has been awarded. They may pertain to an increase or a decrease in the units of work originally proposed or the addition of new items of work. These changes should be kept to an absolute minimum, and they should only be favorably considered when they are monetarily or materially beneficial to the State.

Contract changes that include any modification of items, quantities, material requirements, specifications, changes in allotted contract time, or any other deviation from the scope of the original Contract must be documented and approved via a Change Order. **[101.14]**

Whenever a change can not be completed at the original unit bid price, a new price must be negotiated. Negotiated prices and new item prices will be approved only on a Change Order.

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Changes can result from a number of different causes. These causes are discussed in detail in the following Subsections of the Specifications:

Cause of Change	Specification Reference
Owner Directed Extra Work	104.05
Change in Design	104.05
Change in the Character of the Work	104.05
Differing Site Condition	104.06
Suspension of the Work	104.07
Value Engineering Proposal	104.12
Settlement of Claim	105.19
Delays to the Project Completion Date	108.08

B10.02 FHWA Requirements. Whenever major changes are anticipated on Federal-Aid oversight projects, FHWA must be immediately advised of the requested change. Non-major changes may be approved by FHWA after the effective date of the change. FHWA must approve all changes to Federal-Aid oversight projects. Please refer to Appendix C of Part J for further information.

B10.03 Owner Directed Extra Work, Design Changes, and Changes in the Character of the Work. Any plan revisions, adjustment of Contract Item quantities, or similar change that the Department determines to be necessary for completion of the Work is a change in the character of the work. Changes in the character of the work are paid for with Change Orders. In some cases, the quantity of a Contract Item will increase to more than 125 percent or decrease to less than 75 percent of its original value. This is also considered a change in the character of the work. **[104.05]**

The Inspector should be aware of any conditions on the Project that may constitute a change in the character of the work. Typically, a change directed by the Department will be directed through a letter, memo, or revisions to the Plans. Changes may also be directed during progress meetings or in the field.

The Contractor is required to provide written notice to the District Construction Engineer any time it believes there has been a change in the character of the work. However, this does not mean that the Inspector does not need to keep detailed records until such notice is received. Any time the Inspector believes there to be a change, the Resident Engineer/Project Supervisor is to be informed. Documentation of the change, from its origin through its resolution, must be kept. For example, copies of all letters, memos, and meeting minutes pertaining to the change should be kept. If direction was given in the field, it should be noted on the Inspector's Daily Report, including the date, time, who the direction was given to, and what the direction was. If the change came from revisions to the Plans, the Inspector should review and file the revisions as described in Subsection B9.10 of this Manual.

Before the Contractor performs any work that is considered a change, a Change Order must be negotiated. The items in a Change Order are paid in one of three ways: Unit Prices, Lump Sum, or Force Account. (Refer to Subsection B10.09). **[109.04]**

As the Department's representative in the field, the Inspector is responsible for ensuring that the work covered by the Change Order is administered properly. The Inspector can effectively administer the Change Order work by using three principles:

- (a) *Track Paperwork.* Always know what paperwork is needed, who is responsible for providing it, when it is to be provided, where it should be filed, and who should get copies. This will keep the Project records complete and ensure that the Inspector has all the information needed to administer the change.
- (b) *Keep the Engineer Informed.* Always let the Resident Engineer/Project Supervisor know of any conditions that may result in a change, the status of all Change Order work, and any potential problems that occur in the field. The Resident Engineer/Project Supervisor is responsible for all work performed in the field. Keeping the Resident Engineer/Project Supervisor informed enables him or her to manage the Project and make any decisions that are beyond the Inspector's responsibility.
- (c) *Keep Detailed Records.* Always maintain detailed records of the Change Order work performed on the Project and all other work being performed at the same time. Detailed records are important for payment, completion of the Project, and can help with claims the Contractor may submit. Refer to Subsection B15.02 of this Manual for more information on the importance of good record keeping.

B10.04 Differing Site Conditions. A differing site condition (DSC) is any site condition meeting the definition in the Specifications. [101.26] This definition describes two types of DSC's:

- (a) conditions that differ materially from those indicated in the Contract. Examples include rock being lower or higher than anticipated, encountering water in the soil where none was expected, or discovering portions of an old roadway that prevent the driving of piles as planned.
- (b) unknown physical conditions of an unusual nature. An example of this is the discovery of contaminated soil in an area where there was no indication that contamination may be a problem.

The Contractor is required to notify the Department any time it encounters a DSC. The Contractor is to stop work in that area until the DSC can be investigated. Any DSC may result in a Change Order, so the Inspector must keep detailed records beginning as soon as the condition is encountered. When the DSC is encountered, the Inspector should record the date, time, location, and condition. The Inspector should also make detailed notes regarding any equipment and labor idled as a result of the differing site condition. The Inspector should also note what other work was proceeding when the work is stopped, what work was begun after the work was stopped, and what portion of the Contractor's equipment and labor was moved to the other work activities.

The Department will investigate the DSC to determine if it is in fact a change and how it should be addressed. This may happen quickly, or it may take several days. The Inspector should keep detailed notes of all telephone conversations regarding resolution of the DSC as well as any oral direction given. The date and time of all site visits made by the designers or members of the District office should be recorded. Detailed records of all equipment and labor idled should continue to be made. For example, instead of recording idle equipment as "bulldozers idle," record it as "6 bulldozers idle all day (8 hours)." This information will be needed later when the Department and the Contractor negotiate a settlement.

The Inspector should review the Contractor's schedule to determine what impact the DSC may have to the critical path and project completion. Impacts on other important items, such as

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changing the traffic pattern or material deliveries, should also be noted. The Contractor is responsible for addressing items like this; however, the Inspector is still responsible for being aware of Project conditions.

Once the DSC is resolved, a price will be negotiated and the Contractor will proceed with the work. The Inspector should know how the Change Order is being paid so that proper records can be kept. Refer to the payment discussions in Subsection B10.03 above for more information.

As the Department's representative in the field, the Inspector is responsible for ensuring that the Change Order is managed properly. The Inspector can effectively manage the Change Order by using four principles:

- (a) *Verify DSC.* When the Contractor notifies the Inspector that it has encountered a DSC, review the field conditions and the Plans and Specifications to verify there is a difference. Inform the Resident Engineer/Project Supervisor. The Inspector does not have the authority to make a final determination regarding a DSC; however, the Inspector is responsible for knowing the Plans and Specifications and should be able to explain the situation to the Resident Engineer/Project Supervisor.
- (b) *Expedite the Resolution.* While the DSC is being investigated, the Contractor is not permitted to work in the area of the DSC. **[104.06]** Therefore, the situation must be resolved as quickly as possible to minimize delays to the Project. The Inspector should ensure that all paperwork is completed and supervisors are informed as required concerning the DSC and its resolution.
- (c) *Verify the Resolution.* When the DSC is resolved via a sketch, a revision to the Plans, or a modification of the Specifications, the Inspector should compare the resolution to the Plans and Specifications. The Inspector should ensure that it is consistent with the rest of the Contract and the field conditions. The Inspector should also ensure that the solution is clear and legible; a fax of a sketch may be hard to read, further delaying resolution of the DSC as the Contractor requests clarification.
- (d) *Keep Daily Records.* Always maintain detailed records of the Change Order work performed on the Project and all other work being performed at the same time. Detailed records are important for payment, completion of the Project, and can help with claims the Contractor may submit. Refer to Subsection B15.02 of this Manual for more information on the importance of good record keeping.

B10.05 Suspension of Work and Contract Time Extensions. The Engineer may suspend all or part of the work by informing the Contractor in writing. Information on suspensions and the implications for Change Orders are discussed in Subsections B11.07 and B11.08.

Even though the work is suspended, the Inspector is still required to keep accurate records of the Project. On the day the suspension takes effect, the Inspector should record all working equipment that became idle because of the suspension. The conditions of the Project site should be recorded, including materials stockpiled and completion percentages for work in progress. The Inspector should also record all work necessary to shut down the Project, such as drainage, weather protection, traffic controls, and security measures.

Contract time extensions, when granted by the Department, are shown on the appropriate Change Order, along with all the justification for the extension. Information on extensions of Contract Time and the implications for Change Orders are discussed in Subsection B11.09.

B10.06 Value Engineering Proposals. A Value Engineering Proposal (VEP) is a proposal submitted by the Contractor to modify one or more aspects of the Contract. A VEP allows the Contractor to propose changes to the Work that will result in a savings to the Department; however, VEPs may not propose modifications that would affect the essential operating functions of the completed Project. The motivation for submitting a VEP is that the Contractor and the Department split the savings that result from the modifications to the Contract. **[104.12]**

When a Contractor submits a VEP, the Department reviews it and either accepts or rejects it. Until the VEP has been accepted, the Contractor is required to proceed with the Work in accordance with the original Contract. The Inspector should be aware that the Contractor may slow down its work in anticipation of approval of the VEP. While this is understandable, as the Contractor does not want to perform work that would be changed if the VEP was approved, it is not allowed by the Contract. Therefore, the Inspector should keep good records of work being performed. If the work being performed differs from the Contractor's Schedule of Work, this should be noted. As explained in Subsection B15.02 of this Manual, good Inspector's Daily Reports will help avoid Contractor claims.

Once a VEP is approved, the change is handled in much the same way as a change in the character of the work, discussed in Subsection B10.03 above. The Inspector should ensure that copies of the Contractor's revised Schedule of Work, revised Plans and Specifications, and the Change Order are included in the Project file. The Inspector should review and be familiar with all these documents. They are a part of the Contract, and the Inspector is as responsible for knowing and enforcing the VEP as he or she is for enforcing the original Contract.

B10.07 Settlement of Claims. When a Contractor submits a claim to the Department, it is evaluated as described in Subsection 105.19 of the Specifications. This evaluation is made by the District and usually does not directly involve the Inspector. However, the Inspector should be aware that his or her daily reports and other Project documents will be used by the District to assist in evaluation of the claim. Therefore, this information should be complete, detailed, accurate, and organized in order to facilitate the District's evaluation.

If the Department agrees with all or part of a Contractor's claim, it will issue a Change Order to award additional money or extend the Contract time. If a claim is submitted and decided while the other work on the Project is progressing, the Inspector should ensure that a copy of the Change Order is on file in the field office. The Inspector should be familiar with the Change Order in case it affects other work on the Project.

Claims not settled at the District level will be forwarded to the Claim Committee for evaluation.

B10.08 Delays to the Project Completion Date. Delays to project completion are discussed in Subsections B11.10, B11.11, and B11.12. The Inspector should review these Subsections and the associated requirements in the Specifications. **[108.07] [108.08] [108.09]**

B10.09 Paying for Items Included on Change Orders. Change Orders are paid for by Unit Price, Lump Sum, or Force Account. Each of these methods requires that detailed records be kept in order to determine payment for work performed.

- (a) *Unit Price.* Payment by Unit Price requires that the Inspector keep the same type of records for the Change Order work as for the Contract work. However, it

should be noted on the Inspector's Daily Reports what portion of an item was Change Order work so that the Contractor is paid only for the work agreed to in the Change Order.

- (b) *Lump Sum.* When work is paid for by Lump Sum, the cost of the work, regardless of actual quantities, is agreed to before the work begins. Payment is made based on the Contractor's progress. For example, when the Contractor has completed 50 percent of the work, it will be paid 50 percent of the lump sum. The Inspector must review the method to be used so progress can be tracked and payment can be determined.
- (c) *Force Account.* Payment by Force Account may be resorted to when unit prices or a lump sum is not applicable, or whenever a mutual agreement cannot be reached.

During the execution of the work, the Inspectors should maintain detailed daily records of all Force Account activities. At the end of each day, the Inspector and the Contractor's representative must sign the completed daily Force Account form.

Both the Inspector and the Contractor should execute the work with the utmost honesty and integrity to ensure that it is being performed in the most efficient and expeditious manner. The Resident Engineer/Project Supervisor should personally, or by delegation, oversee the Force Account work when necessary, so that the desired result will be accomplished using the least possible amount of labor, materials, and equipment.

Force Account submissions to the District Estimating Section must include:

- (1) The original completed change order form.
- (2) Copies of all pertinent correspondence
- (3) A signed copy of all Inspectors' Daily Force Account records
- (4) A copy of the Contractor's paid invoices for all material furnished and freight charges paid

For more information on Force Account records, refer to Subsection 109.04 of the Specifications. A sample Daily Force Account record is shown in Part H of this Manual.

B10.10 Change Order Processing Procedure. Whenever any of the previously described changes to the Contract take place, work is added to or deleted from the Project, or the proposed quantity is excessive or insufficient to complete the work as shown on the Plans, the Resident Engineer/Project Supervisor should create a Change Order. (A Change Order and the list of codes are in Part H.) On the Field Change Order form a column titled "Reason Code". In this column, the Resident Engineer/Project Supervisor will place the lettered code from the code list that best describes the reason for the change. The second page of the Change Order is the remark report that must be filled out for each item by the Resident Engineer/Project Supervisor. Remarks must be thorough but brief descriptions of the reason for the change. Explanations like "did not need quantity" or "needed additional quantity to complete contact" are not acceptable because they lack the detail needed for the designer to make corrections on future contracts. The Resident Engineer/Project Supervisor will attach all necessary back up information for the Change Order and forward it to the Area Engineer/Construction Manager for approval.

The Area Engineer/Construction Manager, after verifying that the required funds are available, will forward the Change Order to the District Estimator for review and input into the Project Payment Tracking System. Typical projects are funded with a contingency of two to five percent, depending on the size of the project. Once the original contingency funds are exhausted, a contingency increase must be requested by the District Construction Engineer and approved by the Division of Financial Management and Budget. Inspectors must notify the Area Engineer/Construction Manager as soon as a change that will require a contingency increase is necessary. Refer to the Request for Contingency Increase/Decrease form in Part H.

After review and input, the Change Order will be signed by the District Construction Engineer and the Contractor and the whole package (Change Order with attachments) will be distributed throughout the Department. A sample of the two-page Change Order cover sheet is in Part H.

A Change Order may also be initiated by the Designer as a result of a Plan revision. In this case, the District Construction Engineer will work with the District Estimator in drafting the Change Order. The Estimator will input the Change Order as described above and will get all the necessary signatures and distribute.

When change orders are submitted for processing, the items are to be in the same sequence as in the Estimate Book. Do not separate plus items and minus items. Final quantity adjustments for completed items should be submitted when 15 to 20 items are completed and checked by the District Estimating Section. This will eliminate final change orders that have excessive items and large monetary values when the Contract is completed. It is important to place all items or quantities that definitely will not be used on a “minus” change order. This will free up funding which otherwise would be frozen until the end of the Project.

B10.11 Change Order Funding Breakdowns for J Accounts. In order to standardize the procedure for submitting Change Orders when both Federal participating and non-participating monies are involved, please follow the guidelines listed below:

- (a) Turn in separate Change Orders for non-participating, participating, and J Account items.
- (b) Be sure Estimate Books and cumulative record books properly show the breakdown between non-participating, participating, and any J Accounts.

J Accounts are funds reimbursed to the State from either utility companies, municipalities, or private sources. All items involved in reimbursable work must be separated in the above books.

Additionally, check the contingency limit shown on each Change Order and advise the Area Engineer/Construction Manager as soon as it appears that more funds will be necessary to increase the contingency limit. Check with the District Estimator if there are any questions on the above.

SECTION B11.00 – CONTRACT TIME CHARGES

B11.01 General. Each Contract is assigned a specific length of time in which the Work must be completed. This length of time is called Contract Time and is defined in the Standard Specifications. [101.20] The allowable time and the method for assessing time charges are indicated in the Bid Proposal. The allowable time is indicated as a specific number of Working Days, Calendar Days, or as a completion date. In some instances, however, the Contract may

specify a completion date for a portion of the Contract and allow a specific number of Working Days or Calendar Days for the remainder of the Contract. [108.03]

When a Contractor fails to complete the work within the Contract Time, including any time extension that may have been authorized by the District Construction Engineer, the Contractor is assessed liquidated damages and any charges from road user costs in accordance with the Standard Specifications or Bid Proposal. [108.08] [108.09]

B11.02 Working Days. When time charges are to be based on Working Days, the allowable number of working days is clearly indicated in the Bid Proposal. The Department's position regarding the application of Working Day charges under varying circumstances is included in the definition of Working Day in the Specifications. [101.91]

B11.03 Working Day Charges. All Working Day charges are to be recorded in the Construction Diary. Whenever the Working Day charges are recorded as "0" or any fraction of a full day, the Inspector should write an explanation in the diary for each such entry.

A chart should be placed in the front of the Estimate Book that shows the following data:

- (a) Calendar Days (From first day of work to acceptance date)
- (b) Working Day or portion charged on each.
- (c) Accumulated Working Days to date.
- (d) Reasons for charging "0" or fractional days.

Refer to Figure C-3 for a sample of a Working Day record.

Extra Work due to a Change Order should not reflect in the daily Working Day charges. Working Days should continue to be recorded as usual; time extensions, if warranted, will be given at the end of the Project rather than in the middle of it.

B11.04 Calendar Days. When the Calendar Day method for assessing time charges on contracts is specified, the cover sheet of the Bid Proposal will show the number of days allowed.

Unless otherwise specified, Calendar Day charges begin on the first day of work or the tenth day after the date of the official Notice to Proceed, whichever occurs first. [108.02] Each day thereafter, including Sundays and State legal holidays, is considered a Calendar Day. Low production days, non-productive days, or delays of any nature are to be included in the accumulated time. Fractional day charges are not to be credited on Calendar Day contracts.

The total number of Calendar Days charged to the Contract should be the number of days that have elapsed from the first chargeable day to and including the date on which the project attains substantial completion. [101.79] A chart similar to Figure C-3 should be kept for Calendar Day contracts. Liquidated damages are chargeable when the construction period exceeds the specified number of Calendar Days. The request for a time extension should be in accordance with the procedure outlined in Subsection 108.07 of the Specifications and Subsection B11.09 of the Construction Manual.

B11.05 Pre-Determined Completion Date. Some contracts may require that all or a portion of the work be completed by a pre-determined date, even though the overall Contract Time is on a Working Day or Calendar Day basis.

Some examples that may justify a pre-determined completion date are as follows:

- (a) The use of allocated funds may expire on that date.
- (b) The use of the new facility may be desired or necessary at that time.

- (c) Active construction may be undesirable in a particular area after a certain date.

When the work is not finished by the pre-determined completion date, the Contractor must have the permission of the Engineer to continue. Such permission should not, however, be construed as a time extension; it is merely authorization to complete the Contract. When permission is granted to work on the Project beyond the pre-determined completion date, liquidated damages and road user cost charges may be assessed daily in accordance with the Contract and deducted from payable estimates. The liquidated damages and road user cost charges may, however, be partially or wholly voided at a later date by the granting of an official time extension.

B11.06 First Day of Work. The first day of work on a contract is an important date, and it should be established firmly and accurately. It is normally defined as the first day of the work on a Contract Item by the Contractor or the tenth day after the issuance date of the Notice to Proceed, whichever occurs first. The Bid Proposal should be carefully reviewed for possible exceptions to this procedure.

The Contractor may elect to move equipment and materials to the Project site prior to the first day of work. The Contractor may also erect miscellaneous warning and other signs before the first day of work. These advance operations should be done only with the approval of the Construction Engineer.

The Contractor is responsible for advising the Construction Engineer of its proposed first day of work; the Contractor cannot begin work until after such notification. The Resident Engineer/Project Supervisor should immediately inform the District Construction Engineer of the actual first day of work, and it should be clearly recorded in the construction diary.

After being advised that the work has started, the Construction Engineer should immediately forward a written notice addressed to the Assistant Director of Construction containing the minimum following information:

- (a) the date of the first day of work
- (b) the nature of the initial operations.

Copies of the Team Construction Engineer's letter should be forwarded to at least the following offices:

- (a) Director of Highways Operations
- (b) District Engineer
- (c) Area Engineer/Construction Manager
- (d) Materials and Research Section
- (e) Traffic Section (Dover Office)
- (f) Utilities Section (Dover Office)
- (g) Bridge Design Section (if applicable)
- (h) Project Development Section (if applicable)
- (i) Real Estate Section (Dover Office)
- (j) Public Relations Office
- (k) State Police (Proper construction traffic officer)
- (l) FHWA (for Federal-Aid oversight projects)
- (m) Resident Engineer/Project Supervisor
- (n) State Department of Labor & Industrial Relations
- (o) Quality Engineer
- (p) Project Designer

B11.07 Temporary Suspension of Work. A temporary suspension of work is a period during the span of a contract when the work, either wholly or in part, is ordered or allowed to cease. A temporary suspension of work may be initiated by the Contractor, the Construction Engineer, or staff personnel; however, official authorization to temporarily suspend work must be in writing from the Assistant Director of Transportation Solutions, Construction. Prolonged periods of inactivity due to weather conditions or other unavoidable reasons are usually sufficient justification for the consideration of a temporary suspension. On Working Day contracts and surface treatment contracts, the Specifications automatically suspend the Contract by calendar date in late autumn. [104.07] [101.91] [404.09]

When the Contractor wishes to have the Project temporarily suspended, the request, and the reasons therefore, should be in a letter from the Contractor to the Construction Engineer. The request will be reviewed by the District staff to determine if it is in the best interest of the Department. The Construction Engineer may recommend approval or disapproval of the request to the District Engineer. The District Engineer recommending suspending the Project temporarily will seek FHWA's verbal concurrence if the Project is a Federal-Aid oversight project. The District Engineer will inform the Contractor of the decision regarding the request for suspension. Copies of this letter are forwarded to the Area Engineer/Construction Manager, Federal-Aid Officer, State Department of Labor & Industrial Relations, FHWA (for Federal-Aid oversight projects), Materials and Research Section, and other interested parties.

In accordance with the Specifications, the Construction Engineer may grant the Contractor a partial suspension of work. The procedures for granting this are the same as outlined above. The difference between a temporary suspension and partial suspension is that under a partial suspension some limited work is allowed to proceed and be paid for. Working Day contracts are arranged so that partial suspension status is not applicable. Partial suspension may be considered on completion date and Calendar Day contracts.

If a partial suspension is granted, time charges will continue as required in the Specifications. If the Contractor believes it is due an extension of time, it may request one as described in the Specifications. [108.07]

B11.08 Resumption of Work. Either the Contractor or the Construction Engineer may initiate a request to resume work following a suspension of work. If the Contractor wishes to resume work, it must advise the Engineer before resuming work. The Contract suspension will be lifted as soon as the best interests of the Department will be served. Under normal circumstances, orders to resume work will be granted by the Construction Engineer. This should be by means of a letter to the Contractor and should clearly state the effective date. Copies should be distributed to all persons who received the initial suspension letter.

B11.09 Extension of Contract Time. The allotted Contract Time may be extended, when justified by the circumstances on the Project, in accordance with the Specifications. The Change Order forms contain a system for the allowance of Contract Time extensions. Whenever possible this system is to be used to grant time or to deny time. All time extensions, whether granted by Change Order form or by separate correspondence, are to be kept summarized on subsequent Change Orders. [108.07]

The Contractor, via a letter to the Construction Engineer, can initiate a request for an extension of time. This letter should state clearly and accurately the length of additional time

requested and all the apparent reasons therefore. The request for a time extension should be submitted as soon as the need for an extension has been definitely established, and it should precede the expiration of the initial time allotment. The request should not, however, be premature.

The Area Engineer/Construction Manager will review all aspects of the request for an extension of time and forward it with a letter of recommendation to the Construction Engineer. On all Federal-Aid oversight projects, requests that are deemed favorable by the Construction Engineer will be sent to the FHWA by the District Construction Engineer with appropriate recommendations and a request for FHWA's concurrence. Upon receipt of FHWA's concurrence, the Construction Engineer will prepare a letter of approval to the Contractor. Copies of this letter are normally sent to the Area Engineer/Construction Manager, Materials and Research Section, Quality Engineer, Project Designer, Contract Administration Office, FHWA (if Federal-Aid oversight project), and other interested persons.

The approval letter will specifically state the number of additional days allowed for completion, and it should be used to determine the revised completion date or the length of time remaining. Liquidated damages will not be assessed for the period covered by the time extension.

The requirements for granting a time extension depend on whether or not a CPM schedule is being used for the Project.

- (a) *Projects with a CPM Schedule.* A Change Order will only be considered for extension of Contract Time when the modified critical path of the Schedule shows a requirement of additional time because of the added activity or activities and there is justifiable delay as recognized and determined by the Engineer. For any Change Order, the Department reserves the right to request a resequencing of activities to effect a Completion Date within the Contract Time.

If the most recent update or revision of the CPM schedule shows that there is positive float on the critical path, no additional time will be given for activities added by a Change Order unless the new activities are on the critical path and require more time than the total float available.

Before a Change Order is sent to the Contractor for signature, its effect on the CPM schedule will be determined and agreed upon by both the Department and the Contractor. If modification of the Contract Time is warranted, it will be shown on the applicable Change Order and sent for signature. After signature, the Change Order work activities and any time modifications that affect the CPM schedule will be reflected in the next CPM schedule update. No Change Orders will be processed until their effect on the CPM schedule has been determined, unless otherwise approved by the Engineer.

- (b) *Projects without a CPM Schedule.* If the Contractor believes it has been delayed and is due an extension of Contract Time, it is required to submit a request for time extension along with supporting Project documents to support its position. The Department will evaluate the Contractor's request, determine if it is due an extension of time, and inform the Contractor of its decision.

B11.10 Liquidated Damages. Substantial completion is the point at which all Contract items are complete excluding any warranties or vegetation growth. The Construction District should continue to charge time to the Contractor until all originally bid contract items and any added work items which have been analyzed for time considerations are complete and eligible for payment. This includes initial applications of seeding and mulching and initial planting of any

landscaping items. Only minor items such as crack sealing, if not a pay item, maintenance of topsoil and/or seeding, items damaged by traffic, or similar activities will be considered "non-chargeable" punchlist items in regard to time assessment. When a Contractor fails to complete a project in the allotted time, including time extensions granted by Change Order, the Contractor is charged liquidated damages as set forth in the Standard Specifications or the Supplemental Specifications. The rate of assessment is usually based on the total bid price of the Contract, and progressive or final Contract cost adjustments do not affect this rate. Liquidated damages will be assessed on progressive estimates and the final estimate. When liquidated damages are assessed and are later wholly or partially voided by an official time extension, compensatory monetary adjustments should be made accordingly and noted on the subsequent or final estimate. **[108.08]**
[108.09]

The charges to be made on contracts eligible for liquidated damage assessment must be made after careful study of all applicable Specifications.

B11.11 Road User Cost Charges. In addition to liquidated damages, the Contract may also contain Road User Cost Charges that apply if the Contractor fails to complete the Project in the allotted Contract Time. As with liquidated damages, Road User Cost Charges are assessed on progress estimates and the final estimate. The Inspector must review the Bid Proposal and Project Notes in order to determine if the Project has a calculated Road User Cost Charge.

B11.12 Contractor's Progress. It is imperative that the Resident Engineer/Project Supervisor and the inspectors constantly be aware of the Contractor's progress. When a continual lag between the Contractor's progress and the elapsed Contract Time develops, and the Contractor is making no appreciable effort to improve its progress, the Inspector should advise the Contractor that its progress is unsatisfactory. If this lag continues, it should be brought to the attention of the District Construction Engineer, who in turn should advise the Contractor in writing of the unsatisfactory progress. In addition, the Engineer should request a revised progress schedule from the Contractor. The revised schedule should indicate how the Contractor proposes to improve progress and complete the Contract within the allotted time.

The Inspector should also monitor the Contractor's progress to be aware of work being completed out of sequence. If the Contractor completes work out of sequence, it should be reflected in the next schedule update. Many Contractor claims deal with Contract Time issues; therefore, it is important that detailed records pertaining to changes to the Contractor's work sequence and Schedule of Work are kept.

The Contractor is required to provide bi-weekly updates to its Schedule of Work. It is recommended that the Construction Engineer encourage all Resident Engineers/Project Supervisors to post the updated Schedule in the field office. It should enable all visitors to note the Contractor's progress at a glance.

B11.13 Saturdays, Sundays, and State Legal Holidays. The Specifications should be reviewed with regard to performing work on Saturdays, Sundays, or State legal holidays. The holidays that are to be honored are listed in of the Specifications **[101.39]**. Unless superseded by the Standard Specifications or the Special Provisions, Saturdays, Sundays and State legal holidays are not normally considered Working Days when determining the time requirements for a contract. Work may progress on Saturdays at the Contractor's discretion, or if the circumstances necessitate, at the direction of the Construction Engineer. Whenever work is to be done on a Saturday, the person initiating this work, usually the Contractor or the Construction

Engineer, should advise all interested and affected persons in advance. When work is performed on a Saturday, it should have no bearing on Calendar Day charges or a pre-determined completion date. Working Day charges should not be accumulated for Saturday work.

Work is not permitted on Sundays or State legal holidays unless written authorization is issued in advance of the date(s), by the Area Engineer/Construction Manager or if permitted by the Special Provisions. Requests to work on Sundays and State legal holidays should normally be initiated by the Contractor via a letter to the Construction Engineer. This should be followed by the District's approval or rejection in a letter to the Contractor.

The Standard Specifications list the days considered as legal holidays in the State. These days should not be confused with holidays as declared in the Proposal. The Project must be properly staffed for inspection purposes on days that are in conflict with Department holidays.

SECTION B12.00 – ESTIMATES FOR PAYMENT

B12.01 General. Most Department contracts involve the expenditure of many thousands of dollars and require months to complete. For this reason, payments to the Contractor are based on progress estimates. In essence, the work is paid for as it is being completed. In addition, semi-final and final estimates are also prepared and submitted for Department approval and payment.

B12.02 Progress Estimates. Progress estimates are normally prepared on a monthly basis, and they are representative of the amount of work completed during the preceding period. The closing date (cut-off date) for each estimate may be determined by the Construction Engineer. It is recommended, however, that the same day of each month be considered as the closing date for a given contract once the initial closing date has been established. A consistent closing date should be particularly adhered to on all Federal-Aid oversight projects. [109.07]

Information for the progress estimates is obtained by the field inspection force. The initial recordings of measurements made for progress estimates are called source documents unless placed directly into Estimate Books. This information may be recorded by the Inspector in charge, the survey party chief, the Estimator, or their respective representatives. It is usually presented in the form of actual units of Contract Items (Pay Items) completed during the past estimate period. In order to expedite progress estimates, it is acceptable to pay for items such as clearing and grubbing and borrow on an estimated basis. All such estimated quantities should be realistic, and care should be exercised so as not to allow more than the amount of work actually performed. Whenever possible, the Contract Items should be measured, not estimated, for inclusion on the progress estimate.

It is stressed that the Estimate Books are an important part of the records. They should be prepared in a neat, orderly, and thorough manner. All entries must be dated and initialed on each page by the person responsible for the data. The file location for all original notes taken for pay quantities must be noted on each page. All entries are to be reviewed monthly by the District staff, and all sketches and computations should be thoroughly checked for accuracy by the District Estimator with a colored pencil (other than red).

All sketches for areas or solid figures are to be simple, but accurate, and it is desired that all should follow standard approved methods and formulas. In most cases, where several payments have been made on a Contract Item, the item should be summarized on a separate schedule upon closing. Erasures are not allowed in the Estimate Book, and pages are not allowed to be removed. When mistakes are made, simply cross them out and make a new entry. Cross-outs should not totally obliterate the error. All corrections must be initialed and dated.

The following procedure must be used in preparing progress estimates:

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- (a) The Estimate Book is used to show the quantities to be paid on the current estimate. Nothing else should be in this book. The only exception to this is a contract with very few items. In these cases, when it is certain one book will quite adequately care for all records, the back up sketches and tabulations should be placed in the back of the Estimate Book. An effort must be made not to waste books.
- (b) In addition to the Estimate Book, some projects also use computation books. When more than one book is needed on a project, they should be marked “1 of 3”, “2 of 3”, etc., or as otherwise applicable. Refer to Subsection C4.01 for more information.
- (c) No final figures should be shown in the Estimate Book until approved and initialed by the Construction Estimator in the office. They must remain as estimated figures only and will appear as WHOLE NUMBERS only, until such final approval, at which time will be paid up to two decimals.

When the quantities and corresponding payments for a progress estimate have been determined and entered in the Estimate Book, the Inspector will submit a field estimate form and the Estimate Books, along with any pay tickets, to the District Construction Estimator. A sample of a field estimate form is in Part H. The prescribed retainage should be deducted from the payment due as indicated on the Estimate Form. [109.07] [109.09] Liquidated damages should also be assessed and shown on each progress estimate when applicable. [108.08]

All progress estimates are reviewed and audited by the Construction Estimator and submitted to the Construction Engineer for approval. The Estimate Books are returned to the Resident Engineer/Project Supervisor for processing. The estimate is then forwarded to the Department's Finance Section.

The Contractor's signature is required on progress and final payment estimates. The Contractor's signature on the estimate indicates that it is in full agreement with the number of days shown on the estimate to have expired. No estimates are to be processed without the required signature. If the signature is “qualified” in any way, or indicated as signed “under protest,” only one estimate may be processed until full reconciliation is achieved.

Within 30 days of receipt of a monthly estimate payment, the Contractor must pay its subcontractors and suppliers. The Contractor is required to submit verification of this payment on form CN-91 (see Part H for a sample).

B12.03 Payment for Materials Only. On occasion, the Contractor may request, in writing, partial payment for materials that have been delivered and that are to be permanently incorporated in the Project at a future date. A copy of the Contractor's receipted invoice, as received from the supplier, and the Contractor's cancelled check must accompany the Contractor's request for partial payment for materials. Typical examples of materials for which payment may be requested are precast concrete beams and structural steel. Payment on this basis can only be made by written permission of the Construction Engineer. Such a letter of authority is prepared by the District Office based on recommendations from the Construction Engineer. Payment for these materials may be included in a progress estimate, equivalent to the Contractor's actual cost for the materials, and will be entered as a new and separate item. [109.08]

The full cost of the material delivered to the Project should be entered on the estimate. Retainage will be deducted from the material costs in accordance with the Specifications. [109.08]

As materials that have been paid for are incorporated in the Project and paid for in place, a percentage of the material equal to the percentage of the Contract Item being paid should be

deducted from the payment until 100 percent has been deducted. For example, precast concrete beams are often delivered to a project before they are used, and the Contractor will request payment for the material. Payment for precast concrete beams includes payment for both the materials and the labor to place the beams. Therefore, an adjustment must be made so that the Contractor is not paid for the material twice. Assume that 25 percent of the total precast beams are installed in a month. When the progress estimate for that month is calculated, the Contractor will be paid for 25 percent of the precast concrete beams Contract Item. However, in order to prevent double payment, 25 percent of the cost of the line item for payment, which was previously paid, should be deducted from the progress estimate.

B12.04 Semi-Final Estimate. The last progress estimate should be prepared for submission as a semi-final estimate when all work is complete, including final punch list items. It should be based on the actual pay quantities as measured in the field. This semi-final estimate should be submitted using all final calculations and necessary supporting records for quantities, as if it were a final estimate, but the retainage should be withheld. The reason for this submission is to give the District Estimating Section sufficient opportunity to audit and make any necessary corrections before processing the final estimate.

B12.05 Reduction of Retainage. The Department's purpose in withholding a retainage on progress estimates is to protect its interests in the Contract. When considering a reduction in retainage, the following should be considered:

- (a) The retainage should be sufficient to safely exceed:
 - (1) The value of work yet to be accomplished.
 - (2) The value of possible variations in final quantities of items of work that have not been calculated and audited for payment.
 - (3) The value of any claims that the Department may have against the Contractor.
 - (4) The value of any lien for which the Department may become liable and which is chargeable to the Contractor.
 - (5) The value of any warranted items not covered by a separate bond.
- (b) The following requirements govern any reduction in retainage, provided these requirements do not conflict with the Specifications:
 - (1) The amount that is 5 percent of the total bid price that is retained should continue until the Project has reached the point of substantial completion as described in Section B11.10.
 - If the work is considered substantially complete, and the Contractor's Surety has given written consent, the 5 percent retained may be reduced 60 percent (to 2 percent retained).
 - (2) Any further reduction in the amount of retainage from 2 percent is also contingent upon the criteria stated in (1), (2), (3), and (4) above as well as the Surety's consent.
 - The Engineer may further reduce the amount of retainage if, in his or her opinion, the following have been resolved or are being resolved to the Engineer's satisfaction:
 - a. Submission of all reports or records by the Contractor required by the Contract.

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- b. Final quantities for payment purposes are being mutually and progressively agreed upon.
- c. Any remaining outstanding problems on the Project site are not within the Contractor's control. An example of this would be waiting for a satisfactory stand of grass.

B12.06 Final Estimates. Final estimates are similar in composition to the progress estimates. The difference is that the final estimate is the last or “clean up” estimate for the Contract. It is prepared for payment when the Contractor has achieved Completion of the Project. These estimates will be marked “Final” after the estimate number.

When the final estimate is complete and ready for submission it should be reviewed jointly by the Construction Engineer and the Contractor (if the Contractor so desires). This review by both interested parties promotes accuracy of payment for the work performed, and it permits the discussion of possible unintentional omissions.

In addition to being prepared similarly to a progress estimate, the final estimate should be accompanied by other records. A Checklist for Submission of Final Estimate must be attached which will remind the District to forward the construction diaries, the final change order, the as-built plans, and all Federal forms as may be required. Refer to Part H for an example of the checklist.

The Estimating Section prepares the final estimate and forwards it to the Finance Section.

The Finance Section verifies funding availability, checks the final figures and funding codes, and forwards the estimate to the Director of Maintenance and Operations for review and approval. After obtaining approval, the Finance Section drafts the final check for payment to the Contractor.

SECTION B13.00 – UTILITY ADJUSTMENT PROCEDURES

B13.01 General. Frequently, when the installations of private utility companies are affected by the construction or improvement of a highway, the utility companies are obligated to relocate and protect such portions or sections of their installations as necessary to facilitate the construction or improvement of the Project. In some instances, the State may reimburse the utility company for the cost of such work; in other cases, it may be necessary for the utility to bear the cost of such work. In the case of public utilities, such as city or county-owned sewer lines, the Department is responsible for relocating the utility installations.

Where the cost of the necessary relocation and adjustment of a utility facility is an obligation of the State, a utility agreement for performing relocation is generally negotiated between the State and utility company. Utility facilities are adjusted or replaced in accordance with Department policy.

In some instances, utility relocation work is reimbursable; this is accomplished by including the necessary items of work in the general contract on a Unit Price basis. A separate fund called a “J” account is set up for the utility company to place funds into for payment to the State. In other instances, utility work may be accomplished by the utility for a lump sum price to be paid by the State.

SECTION B14.00 – MISCELLANEOUS CONTRACT REQUIREMENTS

B14.01 General. There are many miscellaneous contract requirements that are not directly related to Contract Items. These are shown in the Plans and Specifications. For emphasis, some of these are pointed out in this Manual.

B14.02 Archeological and Paleontological Salvage. It is in the public interest to preserve for public use historical and prehistorical objects such as Native American ruins, sites, buildings, artifacts, fossils, or other objects of antiquity that many have significance from a historical or scientific standpoint. When it appears that significant historic or prehistoric objects have been or are about to be encountered during construction, the Inspector should immediately take steps to preserve them and notify the Construction Engineer.

The Construction Engineer, in turn, will advise the appropriate authorities within the State of the situation and permit them to inspect the site to determine the advisability of salvaging the objects.

B14.03 Required Notices and Posters. The Proposals for highway construction contracts state that certain documents must be displayed in a conspicuous place on the Project so that interested persons may be readily aware of their contents. The information required to be posted includes the following:

- (a) *Fraud Poster:* as required by Section 1020, Title 18, United States Code, a Fraud Poster must be displayed during the course of work. It points out the consequences of impropriety on the part of any employees working on the Project. The names of the Department of Labor & Industrial Relations and the FHWA appear on this form.
- (b) *Wage Rates:* The schedule of wage rates as shown in the Proposal and as subsequently modified or amended must be posted where all workers can view it. If more than one wage area is listed, the wage area applicable to the Project should be clearly defined. Sample Wage Rate posters are in Part H.
- (c) *Equal Opportunity Posters:* Contractors are required to post the prescribed equal opportunity posters.

B14.04 Enforcement of Labor Provisions. In order to fulfill the requirements of the Contract, the Contractor must conform to all labor provisions included therein. It is the Contractor's responsibility to be certain that the requirements regarding labor are properly carried out. Checks and documentation of the labor regulations take a variety of forms, as follows:

- (a) *Posters:* The required posters and wage rates must be posted on the Project when work is in progress.
- (b) *Interviews:* The Engineer or the Engineer's staff should conduct random on-the-job interviews with several employees of the Contractor and Subcontractors each month to determine the actual wages being paid and whether the employees are properly classified in the work being done. This information is reported to the District office on the Routine Labor Relations Interview form, shown in Part H. Any wage discrepancies should be brought to the Contractor's attention.
- (c) *Statement of Compliance:* The Contractor is required to submit a Weekly Statement of Compliance on all Federal-Aid oversight projects. This affidavit is

related to Anti-Kickback regulations and is required throughout the course of the Project.

- (d) *Payrolls:* On all Federal-Aid projects, the Contractor must submit a weekly payroll copy, along with a certificate indicating that the attached payrolls are correct and complete, to the Resident Engineer/Project Supervisor. Authorized Subcontractors must provide the same information weekly. On all contracts, the Contractor must forward copies of the payrolls to the Department of Labor.

On Federal-Aid projects, certain payroll entries must be checked. The Resident Engineer/Project Supervisor is to examine the payrolls for conformance with the wage provisions of the Contract. Entries to be checked on every payroll include:

- (1) That the wages being paid to laborers and mechanics are not less than required in the Contract.
- (2) That the work being performed by any specific class of employees, including helpers or apprentices, conforms to the classification set forth in the Contract for the wage they are being paid.
- (3) Whether the wage classification is correct or if there appears to be a disproportionate number of lower paid help, such as laborers, helpers, or apprentices, indicating avoidance of minimum wage rules.
- (4) Work classification and title code number for each employee
- (5) Hourly wage rates for each employee, including fringe benefits if applicable
- (6) Are daily and weekly total hours shown?
- (7) Is the certification signed?
- (8) Are deductions itemized?
- (9) Are all deductions approved? Approved deductions are shown under Title 29, Code of Federal Regulations, Section 3.5. This is quoted in the FHWA Labor Compliance Manual.

At least the first two payrolls submitted by each contractor or subcontractor of each project should be fully reviewed for:

- (1) Arithmetical accuracy
- (2) Overtime application and computations (over 8 hours per day and/or over 40 hours per week)
- (3) Wage rates verified with those shown in the applicable contract
- (4) Employee's full name, full address, and social security number shown on the payroll when his or her name first appears.

If full compliance is shown on the initial payrolls, the steps listed above can be performed on a sampling basis of subsequent payrolls, at the Engineer's discretion.

Wage rates reported on the employee spot check interviews should be verified with the rates shown on the appropriate payroll.

If it is found that the payroll has discrepancies and clerical errors, such errors should be called to the attention of the Contractor and corrections should be promptly made. The submitted payroll should never be returned to the Contractor. Corrections are to be made by supplemental payrolls prepared and submitted in the same manner as the original.

Delay in prompt submittal of the required payrolls may cause delay in payment of monthly estimates to the Contractor.

- (e) *Employment Records:* The terms of the Contract require that the Contractor's employment records be available during progress of the work and for 3 years after the Department has made final payment.
- (f) *Violations:* Any complaints of violation of the labor standard should be forwarded to the Department of Labor. The FHWA Labor Compliance Manual indicates the disposition in case there is substantial evidence that the violations with regard to payrolls are willful or if restitution by the Contractor or Subcontractor is not made. Deliberate violation of the labor requirements regarding wages is a serious matter and cannot be tolerated.

B14.05 Determining Wage Classification. In checking payrolls and hearing complaints with regard to wage difficulties, the Engineer will be confronted with the problem of determining the actual classification in which an employee is working. Seldom is the solution clear-cut, nor does the State have the authority to determine definitely the classification in which the Contractor's employee fits. For example, the Engineer does not have information as to the duties of a carpenter's helper versus those of a carpenter. Therefore, final analysis in the case of a wage dispute must be resolved by the Department of Labor.

When a wage dispute arises, the District should obtain and assemble all the information available and forward it to the Department's EEO Officer.

Some of the policies and previous determinations regarding labor and labor classifications are contained in the FHWA Labor Compliance Manual.

B14.06 Community Relations. It is important that inspectors notify the Resident Engineer/Project Supervisor, who will then notify the District Staff, at least seven days in advance concerning construction activities that affect road closures and restrictions to the traveling public. This communication is in addition to the direct notification provided by the Resident Engineer/Project Supervisor to State and local emergency and other interested agencies.

SECTION B15.00 – CLAIMS PROCEDURE

B15.01 Claims for Adjustment and Disputes. The procedure for handling Contractor claims is detailed in Subsection 105.19 of the Standard Specifications. The Inspector should check whether the claims procedure has been modified by the Project's Bid Proposal.

B15.02 Contract Claims: Daily Reports Can Help. Accurate, thorough, and complete daily report forms can make the difference between settling a claim for additional compensation and being forced to expend time, money, and effort litigating the claim. Moreover, because of the rules of evidence, inadequate daily report information may result in denial by the courts of otherwise valid claims.

An example of the importance of keeping good daily records comes from the State of North Carolina, where, several years ago, a contractor learned this fact the hard way. This example discusses the impact of the contractor's daily records on its claim; however, the principles discussed apply to all daily records kept by the Department as well.

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On April 1, 1965, Contractor X was awarded a contract by the North Carolina Department of Transportation (NCDOT) to construct a portion of I-95. The contract included an estimated quantity of 12,000 cu yd for undercut excavation, for which X bid \$0.50 per cu yd. By the time the project was completed, six months behind schedule, X has removed 259,729 cu yd of undercut excavation. This amounted to more than a 2000 percent overrun of the entire original contract quantity. X submitted a claim under the *Alteration of Plans or Character of Work* clause to recover the additional cost it incurred, over the unit price paid by the NCDOT, to remove the substantial overrun of undercut excavation.

The court was asked to decide two issues: whether the overrun constituted a changed condition entitling X to equitable adjustment in the contract unit price for undercut excavation; and whether entries and reports that were offered to substantiate X's claim for additional compensation were properly admitted in evidence.

X won the battle, but lost the war. The battle was won when the North Carolina Court of Appeals ruled that the contract permitted an equitable adjustment in contract unit price for materially different, "changed" conditions, noting that the broad purpose of changed condition clauses is to encourage low, competent bids. Ignoring that policy would open the door to disastrous consequences for the state. The court quoted from an article:

Drafters of contract forms foresaw greater economy to the government if contractors could be encouraged to bid upon normal conditions, with the assurance that they would be reimbursed in case of abnormal conditions actually encountered and to the extent that they actually increase costs. *Anderson, Changes, Changed Conditions and Extra in Government Contracting*, 42 III. L. Rev. 29, 47 (1947).

X lost the war, however, when the court refused to award X the damages it requested because it found that the daily reports had been improperly admitted in evidence. The damages report was divided into three parts: Part A was a claim for rental of extra equipment (\$94,310.14); Part B was for labor (\$23,343.67); and Part C was a claim for expenses incurred during the six month period of overrun. The compilation of damages was based on an analysis of daily reports prepared by X's superintendent. The court viewed these reports as incomplete, as there was no indication of equipment actually in operation or broken down, the hours of operation were not set out, and there was no way to tell what equipment was in operation.

The court noted that the *daily reports should be so complete and in such detail* as to indicate that they are reliable and accurate. The requirements of reliability and accuracy were not met by a summary of incomplete daily reports prepared for use in litigation rather than for the routine operation of business. To report that 36 machines are on a job site on a given day is unsatisfactory.

Most state road and bridge specifications require detailed supporting documentation in the nature of force account records. The North Carolina provision, quoted by the court, provided as follows:

In the event that the Commission and the Contractor are unable to reach an agreement concerning the alleged changed conditions, the Contractor will be required to keep an accurate and detailed cost record which will indicate not only the cost of the work done under the alleged changed conditions, but the cost of any remaining unaffected quantity of any bid item which has had some changed conditions, and failure to keep such a record shall be a bar to any recovery by reason of such alleged changed conditions. Such cost records will be kept with the same particularity as force account records and the Commission shall be given the same opportunity to supervise and check the keeping of such records as is done in force account work.

In light of this ruling, contractors should seek to improve their daily report forms and educate their field superintendents and foremen on the necessity of completing the form. Daily report forms should include the following information:

- (a) Project and date
- (b) The weather

(c)	Equipment on project, operator, hours in operation, down time, activity and location while working.
(d)	Other personnel on project, hours of work, location of work
(e)	Subcontractors on project, hours of work, location of work
(f)	Verbal directions from the department
(g)	Unusual site conditions
(h)	Delays, disruptions and out-of-sequence work
(i)	Daily production (anticipated and actual).

Whether the Contractor or the Inspector, or both, is keeping daily records, it is essential to keep a detailed account of each day's activities, including items (a) through (i) above.

SECTION B16.00 – SEMI-FINAL AND FINAL INSPECTION

B16.01 Semi-Final Inspection. When the Contractor believes it has completed all items of Work in accordance with the Contract, it will inform the Department. The Department will then conduct a semi-final inspection of the Project. During the semi-final inspection, the District will develop a list of items that require correction. **[105.20]**

The following people should be invited to the semi-final inspection:

- (a) The District Construction Engineer, the Resident Engineer/Project Supervisor, and any other District personnel deemed desirable by the District Construction Engineer.
- (b) The Contractor.
- (c) The designer of record..

B16.02 Final Field Inspection Attendance. Following the completion of the corrections identified during the semi-final inspection, the District will coordinate a final inspection to verify that the Project can be occupied and used as intended. **[105.20]**

Determination of the persons to be invited to a final field inspection depends on the nature and magnitude of the Project. The following groups, however, should always be invited:

- (a) The District Construction Engineer, the Resident Engineer/Project Supervisor, and any other District personnel deemed desirable by the District Construction Engineer.
- (b) The Contractor.
- (c) Representatives from the Quality Section.
- (d) The designer of record.
- (e) Maintenance Representative.

In addition to the above persons, the following groups should be invited if they are involved:

- (a) The FHWA, if the Project is a Federal-Aid oversight project.
- (b) The Real Estate Agent in charge, or a representative of the Agent, whenever the Project involves new Right-of-Way Agreements.
- (c) Utility companies, when structures are built over the utility, such as a structure over a railroad.
- (d) Municipal officials, whenever they are involved to the extent that their presence is desirable.

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- (e) Consideration should be given to the Traffic Engineer, Utilities Section, Materials and Research Section, and Maintenance Section.
- (f) The Stormwater Engineer

B16.03 Purpose and Procedure. The purpose of the final inspection should be kept in mind during the inspection. At this time, the Project should be complete, and the District Construction Engineer should be satisfied with all items of work performed by the Contractor. A riding tour may be more feasible, depending on the length of the Project. Such a tour should be thorough, and all phases of the Project should be reviewed. Frequent stops and detailed inspections should be made when touring the Project. It is desirable to use a van for inspection whenever possible.

The names of all persons attending the final inspection should be recorded and a list of all unsatisfactory, incomplete, or additional work items should be compiled. At this time, the Contractor should be orally advised of all remaining work, if any, and the disposition of the acceptance date.

B16.04 Final Field Inspection Documentation When All Items of Work Are Found to be Complete. When the project is found entirely satisfactory and no corrections are noted, the Construction Engineer will prepare a letter for the District Engineer to send to the Director of Maintenance and Operations stating the following: [105.20]

- (a) The date and time of the final field inspection.
- (b) A statement that the Project was found to comply with the Plans and Specifications governing the Contract.
- (c) A recommendation that the Contract be accepted by the State.
- (d) The exact date of recommended acceptance and chargeable time, which will be the last day of work by the Contractor or the date of the final field inspection.

The Director of Highway Operations should review the District Construction Engineer's letter and prepare a letter of acceptance to the Contractor.

B16.05 Final Field Inspection Documentation when More Work Is Ordered. When the project requires more work by the Contractor, the Construction Engineer will prepare and forward a letter to the Contractor, usually stating the following: [105.20]

- (a) The date and time of the final field inspection.
- (b) The names, titles, and affiliations of all persons who attended the final field inspection.
- (c) A detailed list of all items that require more work prior to acceptance, usually referred to as a punch list.
- (d) A statement that the acceptance of the Contract will be contingent upon receiving written notification from the Area Engineer/Construction Manager that all work items noted during the final field inspection have been completed.
- (e) A statement regarding completion of the punch lists, establishing a mutually agreeable date for its completion, and possibly resumption of time charges thereafter.

When all remaining items of work have been completed, the Area Engineer/Construction Manager will notify the District Construction Engineer of the date that all work was completed. The District Construction Engineer will then prepare a letter recommending acceptance of the

Contractor for the appropriate District Engineer to forward to the Director of Maintenance and Operations.

SECTION B17.00 – CONTRACT ACCEPTANCE

B17.01 General. The letter of acceptance that is prepared by the District Construction Engineer for the signature of the Director of Maintenance and Operations is the official document whereby the State accepts the completed Project from the Contractor. This acceptance relieves the Contractor of any further construction and maintenance responsibilities. It does not, however, mean that the Contract is closed, as all quantities, payments, and other paperwork must be reviewed in their final form prior to closing the Contract. The final audit is accomplished when the final estimate is processed.

The Contract acceptance date is specified in the acceptance letter. The acceptance date represents the date when all work is satisfactorily complete and the Contractor has moved off the Project site. The acceptance letter will contain a statement defining the last chargeable day of work for the Contract, and this should be used as the basis for assessing liquidated damages if applicable. Copies of this letter are distributed to all persons having connection with or having a file of the Project.

B17.02 Partial Acceptance. Under the terms of the Contract, the Director may, at his or her discretion, accept the Contract in part. This will usually be considered only if there is a distinct advantage to the State to do so. **[105.20]**

An example of this would be if a road or length of road on a Contract is entirely complete and can be opened to traffic. Sometimes it is advantageous to the State to accept a contract from curb to curb only in order to open the road to traffic. If a contract is entirely complete except for seeding, which was performed out of season, the State may consider accepting the entire contract with the exception of the seeding and related items.

If a decision is made regarding partial acceptance, it will only be made following a final or partial final inspection held in the usual manner.

A partial acceptance letter will be written by procedure similar to that for complete acceptance. The partial acceptance letter will always be followed by a final letter of acceptance when the work has been satisfactorily completed.

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NOTES

This image shows a single page of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

[illegible]

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NOTES

This image shows a full page of blank, lined paper. It features approximately 28 horizontal black lines spaced evenly across the page, typical of notebook paper. The lines are thin and extend from the left edge to the right edge. There are no margins, text, or other markings on the page.

This image shows a full page of blank white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for writing or drawing. There are no margins, text, or other markings present.